

WHAT IS CLAIMED IS:

1. A method for making a magnetron wherein said magnetron comprises:
an anode cylinder;
a plurality of vanes arranged radially within said anode cylinder;
5 a magnetic piece disposed at an open end section of said anode cylinder;
an anode vacuum container, including a metal container covering an upper
surface of said magnetic piece;
a cathode disposed along a central axis of said vacuum container; and
an antenna externally discharging microwaves;
10 said method having steps comprising:
placing said magnetic piece and said metal container, in that order, on a
shelf formed inwardly on a thin end section projecting from said open end section
of said anode cylinder;
forming a predetermined number of projections projecting inwardly from
15 said thin end section of said anode cylinder, whereby said metal container is
loosely secured; and
tightly welding said thin end section with said metal container.

2. The method for making magnetrons as described in claim 1, wherein
an outer perimeter of said metal container is bent inward to form an outer
20 perimeter bend, covering a substantial section of end portions of said magnetic
piece.

3. The method for making magnetrons as described in claim 2, wherein said predetermined number of projections are formed after said metal piece and said metal container have been installed by using a projection tool disposed outside said thin end section of said anode cylinder.

5 4. The method for making magnetrons as described in claim 2, wherein:
said predetermined number of projections are formed before said metal container is installed; and

loosely securing said metal container by pushing said outer perimeter bend of said metal container into said predetermined number of projections.

10 5. The method for making magnetrons as described in claim 2, wherein
said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

15 6. The method for making magnetrons as described in claim 3, wherein
said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

7. The method for making magnetrons as described in claim 2, wherein an end surface of said thin end section formed as a projection is formed lower than an upper surface of said metal container.

8. The method for making magnetrons as described in claim 3, wherein said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

5 9. The method for making magnetrons as described in claim 4, wherein said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

10 10. The method for making magnetrons as described in claim 5, wherein said predetermined number of projections are inserted into a predetermined number of holes disposed on said outer perimeter bend of said metal container.

10 11. A method for making magnetrons including, said magnetrons comprising:

- 15 an anode cylinder;
a plurality of vanes arranged radially within said anode cylinder;
a magnetic piece disposed at an open end section of said anode cylinder;
an anode vacuum container including a metal container disposed to cover
an upper surface of said magnetic piece;
a cathode disposed along a central axis of said vacuum container; and
an antenna externally discharging microwaves;
said method having steps comprising:

placing said magnetic piece and said metal container, in that order, on a shelf formed inwardly on a thin end section projecting from said open end section of said anode cylinder; and

forming a substantially ring-shaped projection, projecting inwardly from said thin end section of said anode cylinder, whereby said metal container is loosely secured; and

tightly welding said thin end section with said metal container.

12. The method for making magnetrons as described in claim 11, wherein an outer perimeter of said metal container is bent inward to form an outer perimeter bend, covering a substantial section of end portions of said magnetic piece.

13. The method for making magnetrons as described in claim 12, wherein said ring-shaped projection is formed after said magnetic piece and said metal container have been installed by using a projection tool disposed outside said thin end section of said anode cylinder.

14. The method for making magnetrons as described in claim 12, wherein: said ring-shaped projections is formed before said metal container is installed; and

loosely securing said metal container by pushing said outer perimeter bend of said metal container into said ring-shaped projection.

15. The method for making magnetrons as described in claim 12, wherein an end surface of said thin end section formed as a projection is formed lower than an upper surface of said metal container.

5 16. The method for making magnetrons as described in claim 13, wherein an end surface of said thin end section formed as a projection is formed lower than an upper surface of said metal container.

17. The method for making magnetrons as described in claim 14, wherein an end surface of said thin end section formed as a projection is formed lower than an upper surface of said metal container.